IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for generating a spot for use in halftoning, comprising:

defining a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell; and

scaling the spot function using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a shape changing scaling function;

wherein the spot function is described by:

$$f(x,y)=\frac{1}{2}\left(\cos(\pi x/p_x)+\frac{1}{S(p,r)}\cos(\pi y/p_y)\right)$$

where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling function, and r is the radius of the spot.

2. (Original) The method of claim 1 wherein the two functions allow non-separable changes in spot shape.

3. (Canceled)

4. (Canceled)

5. (Currently Amended) The method of claim [[4]] 1, wherein the scaling function, S(p,r), is described by:

$$S(p,r) = 1 + \frac{1}{p_m\sqrt{2\pi}}\exp\left(-\frac{\left(r/\sqrt{2}-1/2\right)^2}{2p^2}\right),$$

where p_m sets a maximum ellipticity of the spot.

6. (Canceled)

7. (Currently Amended) A printing system, comprising:

a control unit for receiving a print file and processing the print file for printing;

a print head for conveying a print job according to the print file; and

a device for generating a spot for use in halftoning wherein the halftoning reproduces an image defined by the print file using the print head, the device defines a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell and scales the spot function using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a shape changing scaling function;

wherein the spot function used by the device is described by:

$$f(x,y) = \frac{1}{2}\left(\cos(\pi x/p_x) + \frac{1}{S(p,r)}\cos(\pi y/p_y)\right)$$

where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling function, and r is the radius of the spot.

8. (Original) The printing system of claim 7 wherein the two functions allow non-separable changes in spot shape.

9. (Canceled)

10. (Canceled)

11. (Currently Amended) The printing system of claim [[10]] 7, wherein the scaling function, S(p,r), is described by:

$$S(p,r) = 1 + \frac{1}{p_m\sqrt{2\pi}} \exp\left(-\frac{\left(r/\sqrt{2} - 1/2\right)^2}{2p^2} \right),$$

where p_m sets a maximum ellipticity of the spot

12. (Canceled)

13. (Original) The printing system of claim 7 wherein the device is a hardware card disposed between the control unit and the print head.

14. (Original) The printing system of claim 7 wherein the device is a hardware card disposed within the control unit.

15. (Original) The printing system of claim 7 further comprising a print program of a computer for generating the print file, wherein the device comprises screening software loaded into the computer, the computer executing the screening software to perform the halftoning.

16. (Original) The printing system of claim 7 wherein the device comprises software loaded into the control unit, wherein the control unit executes the software to perform the halftoning.

17. (Currently Amended) An article of manufacture comprising a program storage medium readable by a computer, the medium tangibly embodying one or more programs of instructions executable by the computer to perform a method for halftoning an image, the method comprising:

defining a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell; and

scaling the spot function using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a shape changing scaling function;

wherein the spot function is described by:

$$f(x,y)=\frac{1}{2}\left(\cos(\pi x/p_x)+\frac{1}{S(p,r)}\cos(\pi y/p_y)\right)$$

where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling function, and r is the radius of the spot.

18. (Original) The article of manufacture of claim 17 wherein the two functions allow non-separable changes in spot shape.

19. (Canceled)

20. (Canceled)

21. (Currently Amended) The article of manufacture of claim [[20]] 17, wherein the scaling function, S(p,r), is described by:

$$S(p,r) = 1 + \frac{1}{p_m \sqrt{2\pi}} \exp\left(- \frac{\left(r/\sqrt{2} - 1/2 \right)^2}{2p^2} \right),$$

where p_m sets a maximum ellipticity of the spot.

22. (Canceled)

23. (Currently Amended) A printing system, comprising:

means for receiving a print file and processing the print file for printing;

means for conveying a print job according to the print file; and

means for generating a spot for use in halftoning wherein the halftoning reproduces an image defined by the print file using the print head, the means for generating a spot defines a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell and scales the spot function using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a shape changing scaling function;

wherein the spot function is described by:

$$f(x,y)=\frac{1}{2}\left(\cos(\pi x/p_x)+\frac{1}{S(p,r)}\cos(\pi y/p_y)\right)$$

where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling function, and r is the radius of the spot.